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THE COST OF FEELING GOOD

by

CASEY MARGARITE FIELD

A thesis submitted in partial fulfillment of the requirements for the degree of Bachelor of Science in Business Administration in the Department of Finance in the College of Business Administration at the University of Central Florida Orlando, Florida

Fall Term, 2016

Major Professor: Ray Sturm
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ABSTRACT

The Cost of Feeling Good attempts to quantify the optimum portfolio returns of Socially Responsible Investment Funds and Dual-Purpose Portfolios. In order to meet the demands of investors who want to create a social impact and generate financial returns, investors can choose two methods. For the purpose of this study, the social returns were quantified and the financial returns were quantified using net present value. In every scenario, the socially responsible investment decision generated higher financial returns. Because of the immediate loss to an investor after choosing the DPP strategy, financially, the SRI fund appears to be the better approach for a financially driven investor. In terms of social returns, the DPP has a more clear impact on society. Measured as the charitable contribution given on an $1,000 investment, the socially responsible fund contributes far less to society on a per investor basis. Therefore, if an investor is interested in generating higher social returns and wants to be selective in terms of their charitable donation, they should choose the DPP model.

In terms of tax brackets, investors in higher tax brackets have to generate higher financial returns on socially responsible investments in order to match the returns of a DPP. This is also true with investors who invest less in charity. Therefore, the investors that are in the highest tax bracket and contribute little to charity will need to generate far higher SRI returns according to the constructed theory. This finding is important to the growing millennial trend in sustainable investing.
DEDICATIONS

I would like to dedicate my undergraduate thesis to my family. I am eternally grateful for your love and encouragement.
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I am indebted to Dr. Sturm for his willingness to help me with this thesis and serve as my thesis chair. You have inspired me to become the student I am today. Thank you for unfolding this topic with me on the back of a napkin in April 2016.

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I. INTRODUCTION

Most people who enjoy positive cash flows probably pursue two goals with their excess wealth. First, they probably desire a secure future, which necessitates purchasing investments. Secondly, they probably desire to “give back” to society by donating to charities. The goal of investing is to maximize the investor’s wealth while the goal of donations is generally to support social concerns. Historically, the two goals have been mutually exclusive, but recent innovations in the financial markets have at least begun to merge them together. These innovations are generally referred to as “Socially Responsible Investing/Investments (SRI)”.

Steve Schueth (2003) defines SRI as an investment decision that is made based off of a person’s individual values and social concerns. People invest in SRIs for two distinct purposes: to enhance their values and objectives and to see an increase in the potential for the world. Yet, neither purpose is directly related to the purpose of investing – wealth maximization. Rather, these two purposes are more consistent with charitable donations than with investing. So his arguments imply the purpose of SRIs is to merge the goal of charitable donations with the purchase of investments. Moreover, his arguments imply a dual definition of wealth: economic wealth and social wealth. So for purposes of this study, “economic wealth” or “financial wealth” will be used to refer to a person’s level of financial assets they own, and “social wealth” will be used to refer to a person’s level of satisfaction that comes from furthering their social concerns. Further, a “charitable taxpayer” will refer to a person who is subject to income tax and desires to
increase their social wealth.⁠¹ All of this begs the question, are investors better off keeping these two goals separate, or combining them through SRI? Thus forms the motivation for this study. However, what exactly are SRIs?

SRIs are measured by three factors: social implications, financial returns, and investor involvement (Camey, 1994). For example, SRIs do not include investments made to political agendas, or investments made that pair social factors and financial returns. In terms of business growth, investors can invest in companies that serve two purposes (Levine, 2012). According to Schueth the first party wants to “feel good” about their investments, while the second are the social change catalysts that enable the advancement of society. The personal goals of the investor determine which types of investments they are most likely to choose. The personal values investor may invest in a fund that excludes alcohol, while the “social change” investor chooses to support a fund that would have screened out investments in Africa during the apartheid (Schueth, 2003). There is minimal research at this time to explain whether SRIs generate more returns if an investor is self-value focused or social change focused; although, the first requires more reporting on the manager’s part, which may lead to additional expenses on the part of the investor (Schueth, 2003).

Socially responsible investment funds fall into three categories based on the level of interaction the investor is looking to seek. These include:

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¹ As opposed to a charitable person who is not subject to taxation or a person who is subject to taxation, but does not desire to support charitable causes. That is, to increase their social wealth.
1. Screening
2. Shareholder activism, and
3. Impact investing,

Listed in increasing order of investor engagement and social returns. Screening can either be inclusionary (positive) or exclusionary (negative) (Hernandez & Hugger, 2016). Positive screening consists of looking for companies that are women and minority owned, practice fair trade, practice Corporate Social responsibility or do a multitude of other positive things for society. Negative screening does just the opposite. This type of investment allows investors to refrain from things such as companies that violate basic human rights, tobacco and gambling companies (Hernandez & Hugger, 2016). Research has not been completed on whether or not positive or negative investment screenings generate higher financial returns and/or have greater risk; however, it is important to note that positive screenings involve continuous updates and company checks and generate higher social returns.

The second level of investor involvement is shareholder activism which consists of shareholders being actively engaged in the decision making process. This type of SRI consists of voting proxy and shareholder resolutions. For example, from 2012-2014, 175 institutions filed shareholder’s resolutions along with 27 managers, and many successes emerged (USSIF, 2014). One of the most well known was the 2015 resolution that requires BP to report its climate change data- thereby becoming more transparent (Hernandez & Hugger, 2016). Pension plans and unions operate in this space.
The third level is impact investing, some institutions refer to this as community investing. This is where SRIs mainstream is incredibly apparent. Fixed Income SRIs- social impact and green bonds- are those that offer low risk debt. According to ImpactBase 2016, there are 397 impact funds, 85 of which look to financial improving access to finance and 22 with environmental and housing implications (Impact Base, 2016). These two types of investments enable small business growth and affordable housing. This category totaled $45 billion in assets in 2014, according to Eyes on the Horizon: The Impact Investor Survey (Saltek, et al., 2015). Within impact investing, social impact bonds provide a new opportunity for businesses to be funded outside of the government, green bonds promote energy and environmentally efficient practices, equity investments provide increased returns for generating impact, and real estate investments provide for job growth and housing projects. Impact investments generate the greatest social returns, and involve the most active investors (Hernandez & Hugger, 2016). Also included in this category is faith based community development funds (Social Investment Forum Foundation, 2015).

The purpose of this study is to determine if merging the goals of investing and charitable donations into socially responsible investments will generate both higher financial returns and social returns for an individual investor than pursuing both goals separately. To begin the analysis, I will present a history of SRIs for perspective. Of particular interest is their methods used to test their returns and risk compared to both international markets and non-SRI funds, and recent changes in SRI demand. For the purpose of this study, I’ll use the term SRI to explain “Social, responsible, impact” investing - “Putting investment capital to work toward creating a
truly sustainable future; owning shares of the most responsible companies; while making money and having a positive impact—all at the same time” (USSIF, 2014).

Next, I will analyze the tax incentives in the tax code for the tax benefits available to taxpayers because of charitable contributions. This is necessary because investments in SRI (not counting SRIs in the taxpayer’s retirement plan) do not provide an immediate benefit, but contributions to qualified charities do. It will also be a key variable in my investment model.

After identifying the relevant tax benefits to charitable donations, I will develop an investment model useful to taxpaying investors to help guide their SRI investment decision. As a simple example: a charitable taxpayer has excess wealth in a given month of $1,000 and has two choices. First and more traditionally, they could invest $900 into an investment and contribute the remaining $100 to charity. Their second choice is to invest the entire $1,000 in an SRI that is consistent with their charitable intentions. Which decision maximizes their joint goal of wealth maximization and supporting social concerns? The answer to this forms the motivation for this study.

After building the model, I will compile and analyze descriptive statistics for historical SRI against various benchmarks including outputs from my model. Finally, my model will be used in a scenario analysis to determine under what circumstances, if any, investing in SRIs would outperform traditional joint cash outflows of investing and charitable donations. The rest of the study proceeds as follows. Section II presents a brief history of SRIs and Section III will summarize the academic literature on SRIs and returns. Section IV briefly reviews the charitable
contribution part of the tax code and Section V will present a decision-making model for investors. Section VI will present a discussion and summary.

II. A Brief History of SRIs

A. Pre-1960’s Religious Roots

Socially responsible investing is a term that originated among the Jewish faith. In the 12th century, Jewish scholar Rabbi Moses ben Maimonides discusses tzedakah [charity] as an action that allows a person to build self-sufficiency—whether through business partnerships, job creation, or the like (American Jewish World Service). There is also evidence from the Old Testament that highlights the concept of money usage centuries ago. Proverbs 3:9 state “honor the Lord from your wealth,” which means to use your money to provide for the improved well-being of people and enable them to succeed and study the word (New International Version, Proverbs 3:9) (“Money and Possession”, 2005). This view of money can be seen in both the concepts of impact investing and community investing—providing capital for the development of low-income housing and business development in low-income communities (Schueth, 2003). Arguably, this places socially responsible investing in higher religious regard than donating money to people on the streets or charities that do not provide their clients with a way to become self-sufficient. The Qua’ran and Islamic teachings guide Halal Investments and focus on the concepts of social justice and “riba”—interest (USSIF, 2014). Islamic Halal investments screen out these companies by the 5% rule—meaning more than 5% of the business profit is from
forbidden investments, as well as many funds donate a portion of their mutual fund returns to charity as part of the Zakah practice.

Scholars note that the movement of these values investments into the “new world” began with the immigration of Methodist and Quaker peoples (Schueth, 2003). The Methodist movement followed John Wesley’s message in his “The Use of Money” sermon in their investment practices (USSIF, 2014). Wesley noted that the issue with money was that people do not know how to use it correctly and for the good of society (Wesley, 1912). A practice that the Quakers’ later utilized in 1758, Fiduciary Friends of 1898 and a successor group in Boston. The Quakers remove all investments that support violence and slavery, and increase investments that follow their values—such as peace and justice (Friends Fiduciary, 2016). The first public offering SRI was the Pioneer Fund in Boston, Massachusetts in 1928 (Knoll, 2002). This fund was built to avoid sin industries (Knoll, 2002).

B. 1960’s -1980’s SRIs Expand beyond Religion

Until the 1960s, socially responsible investments were simply those that did not include tobacco, slavery, drugs, liquor, gambling, firearms, alcohol, human rights violations, environmental concerns, nuclear energy and other deemed “sin” investments (Schueth, 2003). This term is also interchanged for the words “vice stocks” and represents investments that fall into the seven deadly sin categories including greed, lust, sloth, wrath, lust, envy, and vanity. From the 1960s forward, SRI investments focused on social movements and political interests that were dominating the social sphere. The most noted events during the 1960s were women’s equality, civil rights, the Cold War and the Vietnam War (Schueth, 2003).
The divestment movement led by students of the 1960s brought major concerns about wars and the apartheid into government focus, and displayed the power of socially responsible investments in changing political agendas (Altbach & Cohen, 1990). One example scholars look to is a picture of a nine-year old girl running after being burned by napalm, a chemical generated by Dow Chemicals, in the Vietnam War. E.N. Brant stated that the number of Dow Chemical shareholders fell from 95,000 to 90,000 and in 1969 Dow Chemicals ceased its production of napalm (Berry, 2013). This is a guiding example that the power of the student generation and negative protest can cause a company to lose money, potential new employees, and sales from boycotts. The movements began with civil and human rights concerns in the 1960s turned into concerns over climate changes and the apartheid in Africa (DeGeorge, 2015). In the 1970s, working conditions, Exxon, nuclear power and oil came to the forefront of investment decisions. At the same time, the Pax World Fund was created (SIF, 2003).

The 1980s brought investors’ attention to South Africa. The apartheid- white minority rule in Africa was creating a social ruckus. The United Nations stepped in to place embargos on specific goods. As the government began to restrict trade in certain regions and African governments were corrupted, the Sullivan Principles were created. In 1976, Reverend Sullivan intended for these investments to shine a positive light on companies that increased opportunities for workers and improved social conditions (Knoll, 2002). Instead, it caused a $625 billion dollars of screened investments to exclude South Africa from their funds (USSIR, 1999). It was not until Nelson Mandela reaffirmed the United Nations of the new state of South Africa, that the scare of an end to social responsible investing occurred. According to The Social Investment Forum, after South Africa, only $162 billion in assets continued to be screened (1995). As explained further,
this did not bring an end to SRIs, but in turn brought more social issues into the light for companies and investors. The power of investment dollars in cases like the Apartheid and Dow Chemical crises is insurmountable because the retraction from African markets brought about the end of apartheid and accelerated business regulation reform. Socially responsible investing is the opposing factor to this avoidance of sin investments and social issues.

C. Post-1980’s

After the 1980s, issues such as global warming, the Exxon Valdez environmental scare, human rights, health, and school safety came to the forefront of socially responsible investment practices (Schuetth, 2003) (Hernandez & Hugger, 2016). Through either Screening, ESG Integration, Shareholder Engagement, or Community Impact Investing, or a mixture of any two or more, companies, institutions, and individuals invest their money in companies that are generating positive profits and social returns. Investors contribute capital to impact organizations that support social companies and they in turn create financial returns.

Environmental, social, governance, or ESG investments is a common term that is interchanged with SRI, but it simply means that the institutional investors focus on the environmental factors associated with the company’s outputs, as well as the corporate social responsibility model of the company and its management structure (Discovery Invest, 2016). In 1986, Trillium Asset Management paired with US SIF and other leaders in the SRI space to form the first exclusive ESG investment fund (Berry, 2013).

Twenty years ago, most of the fund managers running SRI- both mutual funds and other securities “had no interest” in managing these investments, and simply entered into the space due
to client requests – indicating this is a “consumer-driven” industry (Schueth, 2003). Schueth notes that women entering the workforce, education and increased access to information, along with a greater understand of how SRIs can compete with other “top-performing” assets have enabled the growth of this industry to be almost double that of the market during the period from 1995 to 1999. During the 1990s, investors also began to see a “mainstreaming” effect in the market of SRIs. Since 1995, there has been a 929% increase in socially responsible investments (USSIF, 2014).

As of 2014, 6.6 trillion dollars were invested in SRI investments (Hernandez & Hugger, 2016), a 76% increase over a two-year span. In 1999, these investments only totaled $2.16 trillion dollars (USSIF, 1999). As of 2014, there were 181 US mutual funds, 39 exchange traded funds, and various other forms of investment vehicles that practice SRI (Huang, 2016). A graph published by the US SIF Foundation models the fast-paced increase in the quantity of socially responsible investments over a ten-year period (US SIF, 2014). From 1995-2014 SRI investments grew from under $1,000 billion dollars to $6,500 billion dollars. The growth in SRIs clearly indicates increased interest in socially responsible investing even though institutions, pension funds, foundations, and college endowments are the biggest contributors to SRI funds per Kiplinger Personal Finance (Huang, 2016).

D. Religious Implications

As of October 2012, there were over $30 billion in mutual funds relating to religion (Kathman, 2012). The Interfaith Center on Corporate Responsibility is the leader in organizing faith-based funds that work towards advocating for communities and organizing investment in
low-interest loans that can “increase liquidity and contribute to development (Social Investment Forum Foundation, 2008). An example of this includes the 1978 Adrian Dominican Community Investment Fund, which manages 3.14 million in assets and 317 investments that promote “social, environmental, and economic justice.” This is just one of many faith based investment funds that contribute to the increase in opportunities for business owners, housing, and communities. Some other instruments used by community development fund initiatives (CFDI) include, low income housing, community development banks, credit unions, and community venture capitalists. The Jewish community is the only religion that fails to have a socially responsible investment fund because of many reasons. This may be because there is no central Jewish hierarchy that sets the Jewish values, and many SRIs promote divestment from Israel, and philanthropy and finance are not to be mixed in the Jewish faith (Hammerman, 2013).

In 2014, the Reform Investment Board approved the Jewish Values Investing Principles, which lay on ESG protocol and support Israel and the Jewish beliefs; however, it is clear that this fund is not an SRI (RPB, 2014). The Protestant community holds the largest amount of these religious investments and takes many approaches to creating the faith-based funds. These include funds that follow the Protestant values (not SRI), and those that promote shareholder advocacy and values based screening restrictions (Kathman, 2012). Many religious funds follow their own created “socially responsible beliefs” and give negative screening to issues such as abortion and Planned Parenthood such as the more than $1 billion worth of Ave Maria Christian funds (Kathman, 2012). This leads to a potential concern that a socially responsible investment may not be deemed socially responsible by all investors. This could bring about difficulty in measuring the dollar value and growth of the SRI sector. Further research can be done to indicate
which religion’s SRI investment funds generate the most returns, or a comparative study to indicate if the returns generated from religious funds are greater than non-religious based SRIs.

E. European Perspective

The term, “European Perspective,” as well as the progress of European Socially Responsible Investment markets, has not been defined as well as that of US SRI funds. Aktie Ansvar Myrberg formed the first SRI fund in Europe in 1965 in Sweden, although the continent did not see growth in this asset class until the 2000s. Because of the Earth Summit (1992), United Nations-backed Principles for Responsible Investments (2006), and EUROSif (2002), SRI investments in Europe had growth rates of 22.6% and 132% for sustainability themed and impact investments since 2011. 41% of these professionally managed assets in Europe are based upon Exclusions, with ESG investments carrying 11% of the total. 2013 data from Spain exemplifies the overall European markets with 92.4 billion euros invested in exclusions; however, it has one of the lowest amounts of SRI investments (Eurosif, 2014).

According to the Global Impact Investing Network (GIIN), governments are also providing support for SRI investments. The British government grants investors a 30% tax relief on social investments; while the EU established European Socially Responsible Funds, which invest 70% or more in social business (GIIN). The G8 leaders also created the Social Impact Investing Forum to focus on impact measurement and development.

F. Overall Growth and Prospects

Overall, the market for socially responsible investing has been growing for numerous different reasons in both Europe and the United States. As seen with the transform of simply the
The term SRI traditionally refers to mutual funds; however, recently socially responsible ETFs have started to be created. In 2014, Cerruli Associates reported that about 6.6 trillion dollars, or 16% of the assets under professional management would fall under the SRI umbrella (PNC Capital Advisors, 2015). According to JP Morgan, pension funds and families make up the majority of these investors at 22% and 17%, respectively (Saltuk et. al). These assets, in general, are primarily split between private equity, debt (68%), appealing to mature, and growth stage companies (Saltuk et al.).

SRI Conference author Steven J. Schueth, President of First Affirmative Financial Network, LLC, accredited this increase to information, climate change, performance, availability, values and authenticity, corporate scandals, women, and finally millennials. With Millennials, those between the ages of 22 and 34 totaling 83.1 million receiving an estimated 41 trillion dollars over the next several decades and a top interest in social impact, there is potential for millennials to transform the social impact asset class (Sorenson, 2016) (U.S. Census 2015).

SRI investments have grown exponentially in the recent decade and are estimated to receive exorbitant new interest in the coming decade, although, research suggests differing results as to whether or not the returns and risk for these investments is comparable to that of conventional investments. This forms an implication for this study. While primarily focused on whether SRIs
should take the place of a combination of traditional investing with charitable contributions, the methodology of this study will show that traditional benchmarks for investment performance may not be appropriate for SRI.
III. SRI s and Investor Returns – Prior Literature

In a report titled “From the Stockholder to the Stakeholder,” researchers gathered data from more than 200 sources and determined that 80% of the studies show that there is a positive correlation between sustainability models and investment returns. The study indicates a flow from focusing on sustainability practices leading to better “operational performance” leading to better cash flows. The latter proved to be correct in 88% of the studies. Better operational performance is also correlated with reduced risk in the study. It is also apparent from the research that sustainability standards and cost of capital have an inverse relationship “90% of the time (Clark, Feiner & Viehs, 2015). This is because the focus on sustainability and ESG criterion within a company affects the risk, performance, and reputation of the organization.

According to a meta-analysis performed by Clark, Feiner, and Viehs (2015) there is cause to support that strong governance generates returns that are more positive; however, studies have yet to prove if governance or an external factor affects the program. A study by Flammer in 2013 indicated that stocks with “eco-friendly events” experience a stock price increase of on average 0.84% while firms with “eco-harmful events” exhibit a stock price drop of 0.65%. Galema, Plantinga, and Scholtens (2008) also pointed towards the impact that book to market values has on the potential of investments; however, stating that the low ratio value inhibits the company from creating maximum wealth.

These specific research findings look to screening and shareholder activism when determining their hypothesis and results. Impact investments are not highly considered in the study. When analyzing the ESG criteria of the firm (see Table 1), the portfolio comprised of the
best ‘100 Best Companies to Work for in America” the alpha from 1984-2011 was 2.3% above the industry average (Edmans, 2012).

In an article similar to this study titled “Does it really hurt to be responsible,” Humphrey and Tan (2014) looked at the book to market values, as well as the risk analysis using Jensen’s alpha, standard deviation, and exclusions in order to create two hypotheses. One being that investment returns decrease as more negative screened companies are excluded and returns increase as more positive screens are included.

The study indicated that because of a few factors, the negative screens on SRIs did nothing to the overall returns of the portfolio because there are only ever 10 truly sin stocks in the S&P 500; and therefore, they do not have the power to generate any significant increase or decrease in returns, as prior studies debated (Humphrey, 2013). The study concludes that there are no significant results or risk from screening at the mutual fund level; however, there is distinctive risk that may be present in large funds. The results showed that the average returns for both funds was .01%, indicating no extreme difference in positive and negative screens.

Most current investment research looks to mutual funds for analysis; however, there is opportunity to further return and risk research in other investment vehicles and in industry or “social impact” funds because of their relation to charitable contributions. It is also pertinent to know that even with the Global Reporting Initiative of 2009, companies still don’t have well-defined rules as to what socially responsible investing is and what criteria should be included in the screening process, as that makes it incredibly difficult to create an impact across many social
and investment platforms (Rhodes, 2009). This highlights an implication of this study, to propose a new benchmark for SRI.

A. VICEX versus SRI

Previous SRI research shows varying results between the effects of SRIs on company cash flows, portfolio risk and cost of capital for investors. Due to the numerous SRI benchmarks and rules that exist currently, it is unclear whether or not items like governance and negative screening have any real effect on portfolio returns. It is also unclear as to whether these factors have a consistent effect through market cycles. This section analyzes different studies that have measured the financial risk and return of SRI/SMRF and vice investments compared to conventional investments across various measures.

In studies concerning non-SRI investments versus SRI investments over economic recession and expansion periods, the VICEX fund- composed of vice stocks outperformed the SRI investments during expansionary periods. A vice, or sin stock is a stock in an alcohol, tobacco, animal testing, oil, armaments, nuclear energy and some fur companies. It also includes companies whose operations contribute to global warming, intensive farming and human rights issues (Wall, 2013). The VICEX- Mutual Barrier Investor fund, in particular, holds 80% of its assets in tobacco, defense, gambling and alcohol industries. The SMRF Fund did not experience this behavior. This Socially Responsible Mutual Fund is one that provides investors both social and financial returns. These funds typically focus on corporate governance, workplace, environment, product safety, community impact and human rights. The study indicates the difference in performance for the SRMF and VICEX funds. The VICEX funds annualized
performance was 3.60% to the SMRF’s -2.91%; however, during recessionary periods, the VICEX fund returns were much lower at -17.60%. During all periods, the SRMF experiences negative returns. The data from 217 SMRF funds suggests that the performance of SRMF during all cycles is relatively zero (Soler-Dominguez, 2016).

In a meta-analysis of the financial performance of SRI of 190 experiments, performance of SRIs was compared to that of conventional investments via effect sizes. The SRIs are compared to conventional index funds, conventional mutual funds, and conventional portfolios to analyze differences. The results noted that there is no real benefit or loss to investing in SRI, but that it is up to the fund manager to increase interest in these types of investments and diversify the portfolio. Companies will thus have an incentive and more financial capital will be available in the future for ethical corporations (Revelli & Viviani, 2015). Again, this study fails to recognize that SRIs are different in scope to conventional investments in its numerical calculations.

Another comparison study used the Jensen ratio, Sharpe ratio, multivariate analysis, and descriptive returns to analyze the conventional versus SRI investments and Islamic indices. This study discovered that SRIs underperform. The study also discusses the idea of co-integration in stating that Islamic indices focus their attention on the same moral standards as SRIs and therefore prove to be very similar. The study points to this relationship as a way of creating new diversification efforts (Charfeddine, 2016). An analysis of ETFs that fall in the SRI category highlighted positive returns to green funds; yet, these were not significant (Sabbaghi, 2011).
In Junkus and Berry’s 2015 analysis of SRIs they touch on numerous points worth discussion. Previous studies examine conventional versus SRI investments using the Sharpe ratio and the four-factor Cahart model. The discussion covering Dutch, UK, and German funds concludes that whether SRI investments underperform, over-perform, or are neutral, a slim majority have proven to be statistically significant at all (Junkus & Berry, 2015).

Other research indicated that SRI funds had increased management oversight to ensure ethical behavior, and therefore performed better. Perhaps the most relevant in this study was an analysis on the effects of different percentages of portfolios being allocated to SRIs in a portfolio. The study found that the increased cost of screening and decline in “investors’ choices,” limited the success of SRIs (Geczy, 2005). However, were the benchmarks for performance used in these studies appropriate?

Studies looking at SRI indexes versus market benchmarks fail to come to one single conclusion concerning risk and return of SRIs as management factors, market factors, and benchmark adjustments were made (Junkus & Berry, 2015). One particular study worth highlighting analyzed 29 SRI indexes and found that overall, the 29 indices were riskier than conventional investments; however, their returns were not significantly greater.

Another study analyzed the differences between risks and returns of SRI and traditional investments using a six factor model as opposed to a four-factor model – small, large, value, growth. The model included both the TBS (top-bottom factor) and AMS (accepted shunned factor) criteria and analyzed the differences in alphas and betas for both investment vehicles using the content betas and fund betas. The TBS criteria is the difference between returns in the
top third and bottom third of companies ranked by 5 different criteria. The AMS is the difference in returns accepted and shunned. The study found that the alphas for the four-factor model were converted into the betas for the six-factor model. It also found that there is an overall lack of a difference in risk and return because investors tend to prefer funds with both high TBS and AMS, which balance each other out and do not prove to be statistically significant (Statman and Glushkov, 2015).

SRI indices are vast in extent and include different background and criteria. Some funds focus on eliminating sin investments, while others capitalize on creating positive sustainable impact. Religious funds often shun some common sin investment and refrain from shunning alcohol. This difference in beliefs and criteria limits the ability to analyze the returns of an impact investment. For the purpose of this study, we will utilize the Parnassus Endeavor Fund (PARWX) as a benchmark. Kiplinger noted iShares MSCI USA ESG Select Index, Calvert Equity Fund (CSIEX), and Walden Equity (WSEFX) as diverse indices in this sphere that represent a breadth of fund ages and criterion for content. A key complication in these findings is the current difficulty in creating criteria to measure the social and financial returns of SRI investments.

Nofsinger also created this approach; however, he noted economic and risk management factors outweighed any social concerns investors may have had (Nofsinger, 2013). Upon analysis, it appears that too much emphasis has been placed on comparison of conventional versus SRI investments which are comprised of two very distinctly different objectives, the latter being that the investor has two objectives to meet when selecting the investment. Therefore, in this study, the author will first develop a model that combines both investing and charitable
activities intended to identify the optimal combination of these activities. Then, the author will demonstrate that this model can serve as a more appropriate benchmark for evaluating SRIs than traditional benchmarks.
IV. Tax Code Incentives for Charitable Contributions

In the traditional combination of investing and charitable donations, donations contribute towards economic wealth via the tax benefit of such activities. In recent decades, charity has fallen into the hands of the government via grants (Blackman, 2015). Because of recent tax incentives for state determined charitable constitutions, charities must maintain compliance with federal regulation and rules in order to remain eligible for these tax breaks. Before filing, an investor must check whether the charity of their donation choice is on the list of charitable organizations. Usually, charitable taxpayers donate nominal amounts of their income in cash, so the items are reported on Schedule A of their Form 1040. However, individuals may be required to file an 8283 or Form 1040 to accurately account and itemize all charitable contributions (IRS, 2011). Further, investors can make the decision to donate using cash donations, pulled income funds, gifts in funds, or donor-advised funds. Regardless of the exact form of the contribution, there will usually be a tax benefit to the taxpayer for supporting qualified charities, although the details can vary. This study is not concerned with the intricacies of the tax code, but with the resulting tax benefit. Therefore, not all of the details inherent in the tax code are necessary to address.

So, looking past the complexities, charitable contributions are usually beneficial to investors in reducing the cost of the contribution. However, Stanaard-Stockholm correctly points out that “you cannot legally structure a charitable gift so that the donor receives a net increase in their wealth” (Stannard-Stockholm, 2008). This is an interesting statement because it refers to a person’s economic wealth, and is correct in this context. However, the donor does (or should) receive a net increase to their social wealth. Accordingly, when this joint goal of increasing both
For the purpose of this study, we will use the estimated tax rates for the 2016 year according the IRS and adjusted for inflation. Along with the noted tax rates, limitations on charitable deductions also factor into the returns an individual receives for making charitable contributions. The IRS limits an individual’s charitable deductions to up to 50% of a person’s adjusted gross income; however, certain private foundations only qualify to be deducted up to 30% of a person’s adjusted gross income (IRS, 2011).

As noted, the tax benefits to individuals play an important role in their decision to make a charitable contribution. Because of the positive and social benefits of charitable contributions to investors, the percentage of their income donated to charity has an impact on the returns they seek to obtain from their investments in the market. For this study, the author will utilize the percent of an individual’s portfolio given to charity as well as their tax bracket to determine the returns needed if the investor was to invest in a traditional mutual fund versus an SRI. The model below further explains the applicable allocations and returns for specific investment decisions.
V. A Model for Socially-Responsible Investing

To create the optimal portfolio of impact investments as opposed to the joint investments in traditional mutual funds and charitable investments, I will model different charitable allocation amounts. For the purpose of this study, I will refer to the later investment decision as a dual-purpose portfolio (DPP). This investor’s portfolio is split between a donation to a charity, or charities of their choice, and an investment in the stock market. The charitable allocations modeled will demonstrate the financial loss and returns of portfolios within a given tax bracket. Because of the higher tax benefits, the model will prove that the lower the assumed tax rate, the less the SRI has to perform to remain in the same financial position. This modeling will allow me to find the indifference point that suggest how much an investor should donate to charity or invest.

The purpose of this study is to enable investors who care about both the world and generating revenue to optimize their portfolios to maximize their economic and social wealth. From a financial perspective, by donating money to charity, an investor is already at a loss.

For the purpose of the study, the S&P 500 will be utilized to represent traditional investments and a portfolio will be constructed based off the level of investment in S&P 500 and charitable donations to the investors’ choice of funds. The SRI returns reported will be determined by finding the return necessary to generate the same financial return on a traditional investment. This financial return is sacrificed by the loss accrued from the investor’s charitable donation. To compare the theoretical optimum investment returns, the study’s findings will focus
an investment in an SRI fund. The study will look to the Parnassus Endeavor Fund (PARWX)\(^2\). Currently managing $1.9 billion in assets, this SRI fund has the highest financial returns. This equity large cap fund goes through multiple levels of ESG screening before it is incorporated into the fund. These levels include exclusionary screening and screening on environmental, social and governance factors performed internally. The year-to-date return on these investments is 10.19% (Morningstar, 2016). The Fund, established in 1984 by Jerome L. Dodson was created to help investor’s acquire capital by investing in good business practices (USSIF, 2014). I will simply relate the average one-year returns on the Parnassus Endeavor Fund to the theoretical returns determined by the model to explain the frequency and chance of these returns actually occurring on the market. Upon completion of this theoretical analysis, Table 1 portrays a basic optimum portfolio structure.

This chart presents a preliminary example of the minimum SRI performance necessary to generate the same financial returns as an SRI investment. Column 1 presents a sample of potential S&P 500 returns in 5% increments. Column 2 presents the assumed allocation that an investor would donate to charity. Column 3 presents the investors assumed marginal tax rate and Column 4 shows the minimum SRI performance necessary to make the investor indifferent between investing in the S&P 500 and donating to charity, or simply investing in an impact fund. Column 4 is calculated by finding the performance of the portfolio split between S&P 500 investments and charitable contributions and finding the comparable performance needed in an SRI fund to make the investor indifferent. This is to say that in order for a split portfolio -charity

\(^2\) PARWX is a U.S., large cap, core equity fund. The fund excludes companies that interact with fossil fuels and includes those companies that have good corporate workplaces and maintain close watch on ESG considerations in their business decisions.
and traditional- would need to generate a 10% return in order to match a 1% return on the SRI fund. The study found that if the S&P 500 generated a 20% return, assuming a 10% allocation to charity and 20% tax rate, a portfolio with 100% SRI investments would need to generate a 10% investment. If the S&P 500 remains neutral, the SRI portfolio can decrease in value 8% and still provide the same return to investors. In the event the S&P 500 falls 20%, the SRI fund can generate a negative return of 26%. In all cases, with a 10% allocation to charity and in the 20% tax bracket, the investor will be more likely to earn a financial return if the markets decline and they hold 100% of their wealth in SRI investments. If the market were to fall 50%, the SRI fund would be worth 50; while, the S&P500 would only be worth 45 if split with a 10% donation to charity. To analyze the effect of tax rates and allocation to charity on the ability to fail, another model will be built. Some countries also utilize the Social Investment Tax Relief protocol and provide benefits to investors that invest in SITR claimed businesses (Gov.Uk, 2016).

According to Table 1, a compilation of the study’s outputs, it is clear that as allocation to charity increases, SRI funds do not have to perform as well to generate the same returns as the S&P 500 and charitable contributions donations.
This table presents potential stock returns on the S&P 500 at different tax rates and gives to optimum SRI Returns necessary to equal those of portfolio returns for investors that donate 10% of their income to charity.

The return on the SRI is calculated as the return in which \[ (1 - D)(1 + R_m) - 1] + DT = \frac{CF}{(1+r)^t} - p \]

D is the portion donated to charity is 10%, R_m is the return on the market, and T is the tax rate. The calculations presented in the table represent the right side of the equation, \( W_{FSRI} \) or \( \frac{CF}{(1+r)^t} - p \). Column 1 is the tax rate from 15% to 39.6% respectively and columns 2-8 represent theoretical returns of the S&P 500.

<table>
<thead>
<tr>
<th>S&amp;P 500 Returns</th>
<th>20%</th>
<th>10%</th>
<th>5%</th>
<th>0%</th>
<th>-5%</th>
<th>-10%</th>
<th>-20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>15%</td>
<td>10%</td>
<td>1%</td>
<td>-4%</td>
<td>-9%</td>
<td>-13%</td>
<td>-18%</td>
<td>-27%</td>
</tr>
<tr>
<td>25%</td>
<td>11%</td>
<td>2%</td>
<td>-3%</td>
<td>-8%</td>
<td>-12%</td>
<td>-17%</td>
<td>-26%</td>
</tr>
<tr>
<td>35%</td>
<td>11%</td>
<td>2%</td>
<td>-2%</td>
<td>-7%</td>
<td>-11%</td>
<td>-16%</td>
<td>-25%</td>
</tr>
<tr>
<td>39.6%</td>
<td>12%</td>
<td>3%</td>
<td>-2%</td>
<td>-6%</td>
<td>-11%</td>
<td>-20%</td>
<td>-24%</td>
</tr>
</tbody>
</table>

Upon completion of the financial analysis, I will conduct an analysis on the social returns of both the DPP and SRI investments. The social returns on the DPP will be measured, solely in the investor’s donation to charity. This will be measured as the percentage of the investor’s donation that is actually donated to charity- this excludes the value, which will go to administrative expenses. This financial contribution by the organization of choice to its respective social mission will be the social return the investor receives. For the investor’s understanding, I will also equate the social return to actual tangible outcomes from different charities of choice (i.e. number of lives saved, medications provided).
In order to quantify the social returns of the SRI, the author will analyze the charitable giving of the top socially responsible and charitable companies. This value will be defined by the amount of money donated to charity per share. If the investor chooses to donate $1,000 to a specific share, for example, the equation will estimate the number of shares they would purchase and equate that to the donation the company will make.

The purpose of this study is to discover what SRI returns are needed to match the social and financial returns. Traditionally, the S&P 500 is used as a benchmark for measuring financial returns. Because of the dual nature of a SRI’s returns, I presume that this study will also indicate that a new benchmark must be utilized when analyzing the returns of a SRI. The results and data models are presented in detail below.
VI. Data

A. Quantifying Financial Returns

For purposes of this study, taxpayers fall into two groups: those who desire to make charitable contributions and those who do not. I am only concerned with the first group in this study. I will refer to them as “charitable taxpayers.” These charitable taxpayers have historically had to divide their total wealth between the funds they want to invest and those they want to contribute to charity. I will call this traditional investing approach a “Dual Purpose Portfolio” (DPP). With the recent innovation of SRIs, they can now accomplish both objectives in a single investment. This assumes that they can find an SRI that matches their charitable goal.

To begin, in a DPP, by donating money to charity, an investor is already at a loss from a financial perspective. Thus, the change in a person’s financial wealth because of the donation can be written:

\[ W_{fD} = -D(1 - t) \]

Where \( W_{fD} \) is the change in the person’s financial wealth, \( D \) is the value of the donation and \( t \) is the taxpayer’s marginal tax rate. While their financial wealth declines, their social wealth changes by:

\[ W_{SD} = SAT \]

Where \( W_{SD} \) is the increase in their social wealth and \( SAT \) is the person’s subjective satisfaction that comes from the donation. This subjective satisfaction is the happiness an investor gains by contributing to society and providing financial support to the charity or social cause of their choosing. That is, the payoff to the donation portion of an investor’s overall portfolio is their
increased satisfaction, which is not quantifiable. The author will use a metric in an attempt to quantify the social impact made by the financial decision.

Next, in the DPP, their financial wealth is expected to change by the net present value of the future cash flows from the investment:

\[
(3) \ W_{fI} = \frac{\sum CF_t}{(1+r)^t} - p
\]

Where \( W_{fI} \) is the change in financial wealth, \( CF_t \) is the future cash flow at time \( t \), \( r \) is the appropriate discount rate at time \( t \) and \( P \) is the current amount of the investment. So charitable taxpayers’ total wealth \( (W_t) \) is given by:

\[
(4) \ W_{TDPP} = W_s + W_{fI} + W_{fD}
\]

Combining equations 1, 2, 3 and 4:

\[
(5) \ W_{TDPP} = \frac{CF_t}{(1+n)^t} - p - (D(1 - t)) + SAT
\]

Where all of the variables are consistent with equations (1) – (4).

In equation (5), the third variable is the main difference between DPP’s and SRI s. In an SRI, \( D \) and \( p \) are combined and \( t \) is zero because investments in SRIs are not tax deductible. So for SRI investors, their total wealth is simply:

\[
(6) \ W_{TSRI} = \frac{CF_t}{(1+n)^t} - p + SAT
\]
Where the variables are consistent with equation (5). Because the negative donation variable is removed from SRI investors’ calculation of total wealth, the performance of SRIs can be less than the performance of the S&P500 and still provide investors’ their required return. This leads to the major suggestion of this study: benchmarks such as the S&P 500 that are usually used to evaluate investments are not appropriate for evaluating SRIs.

The returns to the invested portion of the DPP (R_i) is given by:

\[ R_{DI} = (1 - D)(1 + R_m) - 1 \]

Where D is the portion of the DPP allocated to charitable donations and R_m is the return to the market. Because the donation (D) is not generating any returns, it is factored out of the return equation. The market returns are then applied to the invested portion of the portfolio. For example, if an investor were to donate 5% of their DPP to charity and the market return was 10%, the return would be calculated as .95(1+.1 ) -1 or 4.5%.

The tax benefit (R_c) of the donated portion of the DPP (D) is simply:

\[ R_{DC} = DT \]

Where T is the tax rate. Therefore, combining equations (7) and (8), the total financial return to the DPP (R_{DPP}) is given by:

\[ R_{DPP} = [(1 - D)(1 + R_m) - 1] + DT \]

This return is also the return necessary from SRIs to make investors indifferent between the DPP and SRIs. Tables 2, 3 and 4 show the effect of each variable D, R_m and T on R_{DPP}. 

31
Table 2 SRI Returns the Make Investor Indifferent to Market Returns at 12%

This table presents the SRI returns necessary to make investors indifferent between an investment in an SRI versus a DPP assuming market returns of 12%. This data explains the financial returns to the investor, without factoring in the social returns from the investment, SAT. The first column presents the current marginal tax rates for individual taxpayers, columns 2-7 represent the portion of a DPP donated to charity - 0, 1, 2, 3, 4, 5% - respectively. The return on the SRI is calculated as the return in which 
\[
WFSRI = \frac{CF_r}{(1+r)^t} - p 
\]

\( D \) is the portion donated to charity from 0-5%, \( R_m \) is 12%, and \( T \) is the tax rate. The calculations presented in the table represent the right side of the equation, \( WFSRI \) or \( \frac{CF_r}{(1+r)^t} - p \).

<table>
<thead>
<tr>
<th>Tax Rate (T)</th>
<th>0%</th>
<th>1%</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0%</td>
<td>12.00%</td>
<td>10.98%</td>
<td>9.96%</td>
<td>8.94%</td>
<td>7.92%</td>
<td>6.90%</td>
</tr>
<tr>
<td>15.0%</td>
<td>12.00%</td>
<td>11.03%</td>
<td>10.06%</td>
<td>9.09%</td>
<td>8.12%</td>
<td>7.15%</td>
</tr>
<tr>
<td>25.0%</td>
<td>12.00%</td>
<td>11.13%</td>
<td>10.26%</td>
<td>9.39%</td>
<td>8.52%</td>
<td>7.65%</td>
</tr>
<tr>
<td>28.0%</td>
<td>12.00%</td>
<td>11.16%</td>
<td>10.32%</td>
<td>9.48%</td>
<td>8.64%</td>
<td>7.80%</td>
</tr>
<tr>
<td>33.0%</td>
<td>12.00%</td>
<td>11.21%</td>
<td>10.42%</td>
<td>9.63%</td>
<td>8.84%</td>
<td>8.05%</td>
</tr>
<tr>
<td>35.0%</td>
<td>12.00%</td>
<td>11.23%</td>
<td>10.46%</td>
<td>9.69%</td>
<td>8.92%</td>
<td>8.15%</td>
</tr>
<tr>
<td>39.6%</td>
<td>12.00%</td>
<td>11.28%</td>
<td>10.55%</td>
<td>9.83%</td>
<td>9.10%</td>
<td>8.38%</td>
</tr>
</tbody>
</table>

From Table 2, if an investor donates 0% of their DPP to charity, then they are not a charitable taxpayer and not considered in this study. The SRI returns necessary to reach their required returns equal the benchmark returns. This is the main reason using traditional benchmarks to evaluate SRIs is not reasonable. At any allocation of charitable donations, the SRI returns necessary to make investors indifferent to a traditional investment is substantially lower.

In addition, regardless of the tax rate, the greater the planned donation in a DPP, the lower the SRI returns necessary to reach the investor’s required return. This is because of the loss accrued when an investor donates to charity. This is the idea explained by equation (1) - as
D increases, $W_t$ decreases. Also, notice that for higher income taxpayers, the SRI returns necessary are greater. Equation 1 captures this factor. The greater the tax rate, the greater the tax benefit to charitable donations. For example, the return on a SRI, assuming a DPP investor donates 2% to charity at the 15% tax rate is 10.06%, whereas the return on a SRI that donates 2% to charity at the 35% tax rate is 10.46%.

As the tax rate increases, so do the necessary financial returns needed to match the return of a DPP. In regards to the level of charitable investments, at the 10% tax, if an investor donates 1% of their portfolio to charity, they need SRI returns of 10.98%, versus if they were to donate 5%. At this allocation amount, the SRI returns would only have to be 6.90%. Thus, as the percent of an investors’ portfolio allocated to charity increases, the SRI returns needed decrease. This is because of the immediate financial loss generated by a donation to charity. It is key to note that the variation in returns for a high net worth investor in the 39.6% bracket from a 0% to 5% allocation is only 3.62%, whereas the difference between the necessary returns for someone in the 10% bracket is 5.1%.

As tax rates increase and donation allocations decrease, the SRI returns necessary to match a DPP also increase. As tax rates decline and the level of donations rises, the SRI return necessary declines. There is an inverse relationship between donation amounts and SRI returns and a direct relationship between tax rates and SRI returns necessary. The next table will discuss the returns on an SRI investment needed to make an investor indifferent if the market returns are zero.
Table 3 SRI Indifference Returns to Market Returns of 0%

This table presents the SRI returns necessary to make investors indifferent between an investment in an SRI versus a DPP given market returns of 0%. The first column presents the current marginal tax rates for individual taxpayers, the second to seventh columns represent the portion of the DPP donated to charity - 0, 1, and 2,3,4,5 %- respectively. The return on the SRI is calculated as the return in which \[ (1 - D)(1 + R_m) - 1 + DT = \frac{CF_t}{(1+r)^t} - p \] D is the portion donated to charity from 0-5%, \( R_m \)is 0%, and T is the tax rate. The calculations presented in the table represent the right side of the equation or \( \frac{CF_t}{(1+r)^t} - p \).

<table>
<thead>
<tr>
<th>Tax Rate</th>
<th>Portion of DPP Donated to Charity</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0%</td>
</tr>
<tr>
<td>10.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>15.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>25.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>28.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>33.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>35.0%</td>
<td>0.00%</td>
</tr>
<tr>
<td>39.6%</td>
<td>0.00%</td>
</tr>
</tbody>
</table>

Table 3 shows the SRI results necessary if the benchmark market returns are zero. Like that of the 12% return model, if an investor donates 0% of their DPP to charity, then they are not a charitable taxpayer and not considered in this study. At any allocation of charitable donations, the SRI returns necessary to make investors indifferent to a traditional investment is lower than that of the traditional investment. Regardless of the tax rate, the greater the planned donation in a DPP, the lower the SRI returns necessary to reach the investor’s required return. The SRI investment in all cases can generate negative returns and still provide the investor with the same financial returns if the S&P 500 generates a return of zero. At the 10% level, an investor that donates 1% to charity will require a SRI return of -0.9% to satisfy their financial needs, whereas
the investor that donates 5% only requires returns of -4.5%. The investor in the 39.6% tax bracket would need returns of -3.02%.

The next table outlines the required returns to make an investor indifferent if the DPP returns generate negative returns.

Table 4 SRI Indifference Returns to Market Returns of -12%

<table>
<thead>
<tr>
<th>Tax Rate</th>
<th>0%</th>
<th>1%</th>
<th>2%</th>
<th>3%</th>
<th>4%</th>
<th>5%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10.0%</td>
<td>-12.00%</td>
<td>-12.78%</td>
<td>-13.56%</td>
<td>-14.34%</td>
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</tr>
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<td>-12.73%</td>
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<td>-15.65%</td>
</tr>
<tr>
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</tr>
<tr>
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<td>-12.53%</td>
<td>-13.06%</td>
<td>-13.59%</td>
<td>-14.12%</td>
<td>-14.65%</td>
</tr>
<tr>
<td>39.6%</td>
<td>-12.00%</td>
<td>-12.48%</td>
<td>-12.97%</td>
<td>-13.45%</td>
<td>-13.94%</td>
<td>-14.42%</td>
</tr>
</tbody>
</table>

Table 4 shows the SRI results necessary if the benchmark market returns are zero. If an investor donates 0% of their DPP to charity, then they are not a charitable taxpayer and not considered in this study. Again, at all levels of donations and tax rates, the SRI return necessary is far lower than that of the traditional investments. An investor in the 35% tax bracket that donates 1% to charity requires returns of -12.53%, whereas the same investor would only require
returns of --14.65% if they typically donate 5% of a DPP to charity. An investor in the 10% tax bracket would only require returns of -15.90% at the 5% allocation rate. As stated previously, the immediate financial loss generated from the investor’s donation decision will cause the investor’s DPP returns to decrease. There is a direct relationship between tax rates and investment returns required.

In summary, Tables 2, 3 and 4 present the results of equation (9) showing that returns necessary to equate SRI returns with benchmark market returns are lower for all charitable taxpayers. Additionally, as both the investors’ tax rate decreases and charitable donation amount increases, the returns necessary in an SRI decrease. This assumes that SAT from equation (2) is equal between the DPP and SRI. In the DPP, the investor has complete control over the target for donations, but in an SRI, the investor has less control. Thus, it is reasonable to assume that satisfaction returns (SAT) to investors are lower in an SRI than in the DPP, but the problem is that it is hard to quantify. In the next section, I attempt to quantify this subjective variable, but regardless of the exact number, it can be expressed from equation (9):

\[
R_{TDPP} = [(1 - D)(1 + R_m) - 1] + DT + SAT
\]

For the purpose of this study, the difference between DPP returns and SRI returns is the cost of feeling good. Investors can therefore use equation (10) to measure SAT and decide which investment they want.

For example, from Table 2- given market returns of 12%, the highest income taxpayers who wish to donate 1% of their portfolio to charity should require .72% (12.00% - 11.28%)-higher returns in a DPP than in an SRI. Again, the difference in this excess return is the cost of
feeling good- or level of satisfaction generated by the investor’s decision to make an impact on the world. For a $10 million portfolio, this means $72,000 is the cost of the total control over donations in a DPP versus an SRI. By contrast, for lower- income taxpayers (10%), the difference is 1.02% (12.00%-10.98%) which for a $5,000 portfolio means $51 is the total control over the donation. So SRIs may become less attractive to individuals as their wealth increases. This would also decrease demand for SRIs thereby hurting the SRIs returns. Therefore, in summary, equation (9) which disregards SAT implies that SRIs become more attractive for higher income taxpayers, but equation (10) which includes SAT implies that SRIs become less attractive. Thus, measuring the cost of feeling good (SAT) is important. The next section attempts to quantify the SAT for both DPP and SRI investments.

B. Quantifying the Social Returns

In the previous section, the financial returns of both the DPP and SRI were calculated. Based on the results presented in the tables, it is clear that the financial returns for higher income tax payers exceeded those of lower income taxpayers. However, when SAT was considered, this was not the case. In order to be able to understand the indifference point between SRI and DPP returns, the SAT returns must be quantified. Because of the dual nature of the portfolios in the study, the SAT is a huge factor in the attractiveness of both options. As stated previously, there is not one single method for calculating the social returns from these investment vehicles. Because of this, I will attempt to quantify them below in order to explain the total return of both the DPP and SRI.
Assuming a $1,000 investment, taxpayers in the highest tax bracket receive the most tax deductions for charitable contributions. It is important to note that not all charitable investments are tax deductible. Only specified charities will provide these returns. In all circumstances, the investor is at an immediate loss if they contribute a portion of their proposed $1,000 investment to charity. The data show that taxpayers in the lower rates receive less in return for the same charitable contributions they are making to chosen charities. This in turn makes it less opportunistic for a lower income investor to make a charitable contribution. For instance, the investor that falls into the 10% tax bracket and donates 10% of his, or her investment to charity

### Table 5 Financial Loss and Gain from Charitable Investments

This table presents the financial loss of a charitable investment and the social wealth acquired from the donation. Column one shows the assumed tax rate based on an individual taxpayer’s level of income. The second, third and fourth columns represent a portfolio comprised of 5%, 10% and 20% donations to charity respectively. In each row, the first number $50/100/200 represents the total amount donated to charity. This is calculated as $1,000 * Allocation amount. The number following is the financial gain from allocating that percentage based on one’s tax bracket. This is calculated as $W_{fp} = DT$ where D is the amount of the donation and t is the tax rate. The bottom number is the financial loss from a donation. This is calculated as $W_{fd} = -D(1 - T)$, where D is the value of the donation and T is the assumed tax rate. (Loss/ Gain/Total Loss)

<table>
<thead>
<tr>
<th>Assumed Tax Rate</th>
<th>5%</th>
<th>10%</th>
<th>20%</th>
</tr>
</thead>
<tbody>
<tr>
<td>10%</td>
<td>$50/5</td>
<td>$100/10</td>
<td>$200/20</td>
</tr>
<tr>
<td></td>
<td>$45</td>
<td>$90</td>
<td>$180</td>
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<tr>
<td>15%</td>
<td>$50/7.5</td>
<td>$100/15</td>
<td>$200/30</td>
</tr>
<tr>
<td></td>
<td>$42.5</td>
<td>$85</td>
<td>$170</td>
</tr>
<tr>
<td>25%</td>
<td>$50/12.5</td>
<td>$100/25</td>
<td>$200/50</td>
</tr>
<tr>
<td></td>
<td>$37.5</td>
<td>$75</td>
<td>$150</td>
</tr>
<tr>
<td>28%</td>
<td>$50/14</td>
<td>$100/28</td>
<td>$200/56</td>
</tr>
<tr>
<td></td>
<td>$36</td>
<td>$72</td>
<td>$144</td>
</tr>
<tr>
<td>35%</td>
<td>$50/17.5</td>
<td>$100/35</td>
<td>$200/70</td>
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<tr>
<td></td>
<td>$32.5</td>
<td>$65</td>
<td>$130</td>
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<tr>
<td>38%</td>
<td>$50/19</td>
<td>$100/38</td>
<td>$200/76</td>
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<tr>
<td></td>
<td>$31</td>
<td>$62</td>
<td>$124</td>
</tr>
<tr>
<td>39.6%</td>
<td>$50/19.8</td>
<td>$100/39.6</td>
<td>$200/79.2</td>
</tr>
<tr>
<td></td>
<td>$30.2</td>
<td>$60.4</td>
<td>$120.8</td>
</tr>
</tbody>
</table>
will be at a financial loss of $90; however, the investor that falls into the 39.6% bracket will be at a financial loss of $60.4. This again is if 10% of their $1,000 investment is donated to charity. If a high net worth investor with an income of $500,000 were to donate 10% of their income to charity, they would be at a loss of $30,200 and receive a tax benefit of $19,800. An investor at the 10% level with a $9000 annual income, however, would be at a loss of $810 and receive a tax benefit of $90. DT explains this tax benefit in the equation.

To quantify the social return, SAT, further steps must be taken. The total social wealth generated by a charitable donation, both financial and social, then can be explained as the sum of the actual amount of the donation contributed to charity and the tax bracket received less the financial loss accrued, or

\[(11) W_{DT} = (D_C + DT) - D\]

Where \(D_C\) is the amount of the donation contributed to a charity’s social mission, \(D\) is the donation and \(T\) is the assumed tax rate.

For instance, an investor with $1,000 and a 10% tax rate that donates 10% of his or her portfolio to charity will receive a tax bracket of $10 or \(D (T) = ($100 \times 0.1) = $10\). Their charitable contribution- if the charity donates every dollar it receives- would provide $100 worth of social returns. Therefore, the investor would have an additional financial gain of $10 and a social return of $100, for a total return above that of the financial returns ($10) of $110. Removing the initial loss of $100 to charity that was previously used to quantify the donation, the investor has a net total gain of $10. This increases the required return of the SRI by .1% or $10/$1000. When factoring in the social return generated by a charitable contribution, the investor is at less of a loss than if they were to analyze the financial loss and gain of making a
charitable contribution- a loss of $90. This suggests that the returns on the SRI may need to be higher than previously stated to make an investor indifferent. This is because the value of \( R_{TDP} = [(1 - D)(1 + R_m) - 1] + DT + SAT \) is much higher if you build in the SAT, investor satisfaction variable.

It is very rare, however, that the investor’s donation is contributed solely to charity. Charitable donations to organizations that support medical research, anti-poverty, disease prevention, environmental awareness and other social causes do not contribute their full intake of donations to their social mission. Because of this, this social impact- or SAT- will be measured by the amount of the $100 donation that is used to fulfill a charity’s social mission. I will assume the remainder of the $100 financial loss is used for administrative purposes and “other business” that does not create direct social impact. Table 6 quantifies the average impact made by charities within the respective sector of the community at the 5%, 10% and 20% levels- assuming a portfolio of $1,000.
Table 6 Quantifying the Social Impact of Donations

Table 6 represents the quantifiable cost of satisfaction. This table looks at the top charities and the average impact created by donating 5%, 10%, or 20% of a $1,000 investment to charity. Charity Navigator based on their financial health, accountability, transparency and results reporting has given the 54 charities represented in this table data. The columns indicate the amount of a portfolio that is donated to charity 5% ($50), 10% ($100), 20% ($200). The rows indicate the impact sector in which the charity operates. The number in parenthesis in column 1 indicates the average amount of the initial $100 donation the charities within the sector use for social efforts and programs serving their mission. This is calculated as $D_s = \frac{A_n}{n}$ where $D_s$ is the donation to social needs, $A$ is the donation made by a single firm and $n$ is the number of firms in the sector. The values following are the actual amounts donated to social causes and not administrative expenses. These values can be calculated by: $D_A = C \times D_s$ where $D_A$ is the actual amount utilized to fulfill the social mission, $C$ is the charitable donation by the investor and $D_s$ is the average percent utilized by the sector for social needs.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Charitable Contribution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$50</td>
</tr>
<tr>
<td>Community Development (89.7)</td>
<td>$44.85</td>
</tr>
<tr>
<td>Human Rights (88.95)</td>
<td>$44.48</td>
</tr>
<tr>
<td>Religion (89.20)</td>
<td>$44.60</td>
</tr>
<tr>
<td>Animals (88.70)</td>
<td>$44.35</td>
</tr>
<tr>
<td>Environment (91.10)</td>
<td>$45.05</td>
</tr>
<tr>
<td>Education (92.47)</td>
<td>$46.24</td>
</tr>
<tr>
<td>Human Services (93)</td>
<td>$46.5</td>
</tr>
<tr>
<td>International (91.13)</td>
<td>45.57</td>
</tr>
</tbody>
</table>

A charity will donate an average allocation of 91.46% to services and programs they have indicated that they will serve. This means that beyond only being able to contribute $50, $100, or $200, some of the money an investor donates will not even make it to the cause of their choice.

For the greatest social wealth return on investment, an investor should choose a charity that is in the Human Services, Education, International, and Environmental space respectively. These
three categories generate social returns of 93%, 92.47%, and 91.13% respectively. Considering that these are the top ranked- perfect scoring charities as noted by Charity Navigator, the actual social returns generated by charitable investments are often lower than those explained using the table data. For instance, an investor in the 10% tax bracket has $1,000 and plans to invest 10% into the charity of their choice. They choose to invest in an organization in the education sector. DT equals $10, D is $100 and the Dc equals $100(92.47%) = $92.47. Their total satisfaction from the donation, both financial and social is therefore $10+$92.47-$100= $2.47. The total social satisfaction accrued, SAT_{DPP} equals $92.47, or \( D_A = C * D_s \) as explained in the table. These numbers may be slightly difficult for some to visualize; therefore, the values will be quantified below. This social satisfaction is crucial to understanding the total wealth generated by the portfolio. The purpose at hand is to determine the returns that would make a dual-purpose portfolio and socially responsible investment decision the same. These returns are both social and financial in nature.

What does a $100 donation to charity look like? Figure 1 (presented below) indicates some of the tangible values $100 can hold. For this study, we will be analyzing the social aspect of the investments strictly by the financial value (i.e. $100 x 91.46% = $91.46 donated). This table was constructed based off the Impact Calculator designed by The Life You Can Save (Singer, 2016).
The charitable contributions discussed above will be utilized in explaining the returns on an investor’s portfolio if they were to split their $1,000 between charity and non-SRI investments (i.e. traditional). When a person purchases a non-SRI investment (i.e. traditional investment), their social wealth, the amount of happiness they obtain from financially contributing to a social cause of their choice, does not change. Therefore, the DPP will only generate the social returns explained in Figure 1 from the donation portion of their investment. In order to explain the increase in the total wealth of an investors’ DPP portfolio, the table below was constructed. By utilizing returns of the S&P 500 over the course of 10 years and the average social contribution by charitable donations of 91.46%, the chart demonstrates that total returns are higher if SAT is factored into the equation.

Figure 1 Tangible Social Wealth Acquired from a $100 Donation to Charity

<table>
<thead>
<tr>
<th>Organization</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Against Malaria Foundation</td>
<td>Provide 40 bed nets to protect those living in malaria-stricken areas from infected mosquitos; Protect 60 people from malaria for three to four years on average</td>
</tr>
<tr>
<td>Development Media International</td>
<td>Provide 5 years of healthy life to audiences of DMI's mass media campaigns.</td>
</tr>
<tr>
<td>Evidence Action</td>
<td>Deworm 1000 children; Provide safe water to 119 community members for one year; Channel 100 dollars toward testing and scaling highly effective poverty interventions</td>
</tr>
<tr>
<td>Give Directly</td>
<td>Provide 91 dollars to an individual to pursue their wish.</td>
</tr>
<tr>
<td>Project Healthy Children</td>
<td>Provide 384 people with food-based micronutrient fortification for one year.</td>
</tr>
</tbody>
</table>
Table 7 The Overall Total Wealth Equation

Table 7 represents the overall total wealth considering charitable contributions, social returns, and financial returns over the course of a 10-year period. The overall total wealth equation will be performed on a 1-year basis considering the timely nature of charitable investment tax payments is one year. This chart assumes a 10% charitable donation in a $1,000 portfolio. The S&P 500 return values are adjusted for inflation. These values appear in column 2. In column 3 the tax rates are stated. The charitable gain from the investments (-D (1-T) + Social wealth) appears in column 4. The estimated amount contributed to charity- or the social wealth is $91.46. \((WT_{DPP} = [(\text{Return Financial} * \text{Total investment}) - \text{Total Investment} + \text{Charitable Net Loss})] / \text{Investment in S&P 500})\) is the value in Column 5. Column 6 is calculated using the same equation; however, the denominator is $1000 to represent the full DPP value.

<table>
<thead>
<tr>
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<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>12.87%</td>
<td>10%</td>
<td>1.46</td>
<td>13.03%</td>
<td>11.73%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>13.59%</td>
<td>12.23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>14.70%</td>
<td>13.23%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>15.81%</td>
<td>14.23%</td>
</tr>
<tr>
<td>2007</td>
<td>1.34%</td>
<td>10%</td>
<td>1.46</td>
<td>1.50%</td>
<td>1.35%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>2.06%</td>
<td>1.85%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>3.11%</td>
<td>2.85%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>4.28%</td>
<td>3.85%</td>
</tr>
<tr>
<td>2008</td>
<td>-37.28%</td>
<td>10%</td>
<td>1.46</td>
<td>-37.12%</td>
<td>-33.41%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>-36.56%</td>
<td>-32.91%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>-35.45%</td>
<td>-31.91%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>-34.34%</td>
<td>-30.91%</td>
</tr>
<tr>
<td>2009</td>
<td>23.75%</td>
<td>10%</td>
<td>1.46</td>
<td>23.91%</td>
<td>21.52%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>24.47%</td>
<td>22.02%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>25.58%</td>
<td>23.02%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>26.69%</td>
<td>24.02%</td>
</tr>
<tr>
<td>2010</td>
<td>13.14%</td>
<td>10%</td>
<td>1.46</td>
<td>13.30%</td>
<td>11.97%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>13.86%</td>
<td>12.47%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>14.97%</td>
<td>13.47%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>16.08%</td>
<td>14.47%</td>
</tr>
</tbody>
</table>
This table portrays a description of the theory that social wealth can enhance an investor’s portfolio. Although charitable contributions come at an immediate loss to the investor, when the social wealth generated by the contribution is factored into the equation, the investor generates higher returns than if he or she would have made if they put the same amount into the S&P 500 and did not donate to charity. This is the case if an investor donates $900 to the S&P 500 and does not donate to charity. For instance, the investor in 2014 at the 10% level would generate returns of 12.94%, making the value of their investment $1,016.5 or they can do this....

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
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<td>1.46</td>
<td>-0.71%</td>
<td>-0.64%</td>
</tr>
<tr>
<td></td>
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<td>-0.14%</td>
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<td>25%</td>
<td>16.46</td>
<td>0.96%</td>
<td>0.86%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>2.07%</td>
<td>1.86%</td>
</tr>
<tr>
<td>2012</td>
<td>13.91%</td>
<td>10%</td>
<td>1.46</td>
<td>14.07%</td>
<td>12.67%</td>
</tr>
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<td></td>
<td></td>
<td>15%</td>
<td>6.46</td>
<td>14.63%</td>
<td>13.17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>15.74%</td>
<td>14.17%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>16.85%</td>
<td>15.17%</td>
</tr>
<tr>
<td>2013</td>
<td>30.50%</td>
<td>10%</td>
<td>1.46</td>
<td>30.66%</td>
<td>27.60%</td>
</tr>
<tr>
<td></td>
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<td>15%</td>
<td>6.46</td>
<td>31.22%</td>
<td>28.10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>25%</td>
<td>16.46</td>
<td>32.33%</td>
<td>29.10%</td>
</tr>
<tr>
<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>33.44%</td>
<td>30.10%</td>
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<tr>
<td>2014</td>
<td>12.94%</td>
<td>10%</td>
<td>1.46</td>
<td>13.10%</td>
<td>11.79%</td>
</tr>
<tr>
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<td>6.46</td>
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<td>14.77%</td>
<td>13.29%</td>
</tr>
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<td></td>
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<td>35%</td>
<td>26.46</td>
<td>15.88%</td>
<td>14.29%</td>
</tr>
<tr>
<td>2015</td>
<td>0.57%</td>
<td>10%</td>
<td>1.46</td>
<td>0.73%</td>
<td>0.66%</td>
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<td>6.46</td>
<td>1.29%</td>
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<td></td>
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<td>25%</td>
<td>16.46</td>
<td>2.40%</td>
<td>2.16%</td>
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<td></td>
<td></td>
<td>35%</td>
<td>26.46</td>
<td>3.51%</td>
<td>3.16%</td>
</tr>
</tbody>
</table>
and donate $100 to charity. In this case, their total returns both social and financial are 13.10%, making the value of their investment $1,017.90. If an investor were to invest $1,000 in the S&P 500 fund, however, the value of their investment would be $1,129.40. Therefore, the investor is sacrificing $110.80 by choosing to pursue a DPP. When considering the return on the entire portfolio, however, the same investor in the 10% bracket would generate an overall return—both social and financial of 11.79% or $1,117.90. The decision to pursue the *dual-purpose portfolio* would present the investor with a loss of $11.50 financially, but a gain of $91.46 in terms of social satisfaction. It is also important to note that when the S&P 500 returns are negative, the DPP always generates higher returns than the S&P 500, and in many cases when the investor falls into the 25% or 35% tax bracket, the DPP returns are greater than that of the S&P 500. For instance, in 2011 when the S&P 500 return was -.87%, the return generated by the DPP was between -.64% and 1.86%. In addition, in 2014 when returns were 12.94%, the investors in the 25% and 35% tax brackets obtained higher returns, 13.29% and 14.29% respectively. These scenarios are at play when the investor decides to pursue a *dual-purpose portfolio*, one that splits $1,000 between charitable contributions ($100) and investments ($900). As you can see, the total returns generated by the DPP increase as the tax rate increases, and sometimes even surpass that of the S&P 500.

Considering that in most cases, the return on the total wealth generated by the SRI and DPP funds, the question then becomes, what is the investor’s social goal? If the investor lacks confidence that the SRI will generate the social returns needed, they may choose to invest in the S&P 500 and donate to charity, thereby creating a financial sacrifice for themselves. If this is not the case and the investor is willing to go all in, on a SRI, they can generate much higher returns.
To understand the trends in both SRI investments and the S&P 500, Figure 2 below depicts historic data for the two trends. For the purpose of this trend analysis, the top ranked SRI Fund will be used as a benchmark for the SRI funds. This is the Parnassus Fund (PARWX). The red line shows the one-year returns on the PARWX from 2006 to 2015 and the blue line demonstrates the returns of the S&P 500 over the same period.

**Figure 2 Historic Returns of the S&P 500 and PARWX**

This figure shows the returns on the PARWX and S&P 500 over the period of 2006 to 2015.

As the trend lines demonstrate, the one-year returns of the PARWX fund are much greater than the returns of the S&P 500, except for the period from 2010 to 2011. Figure 2 explains that by investing solely in an SRI, an investor can generate higher returns than if they invest in a *DPP*. If we recall, the *DPP – split 90/10* had a value of $1,017.90. The traditional S&P 500 had a value of $1,128.70. This graph reveals that an SRI fund would have a return even higher than $1,128.70.
To display this relationship, I have constructed a model to explain the PARWX returns at different assigned tax rates. In order to quantify the necessary returns needed on a complete SRI portfolio allocation, an optimum portfolio model will be used. The following tables indicate the necessary returns on an SRI portfolio to match that of a combined portfolio. Table 8 is based off the model used in tables 2-4; however, the table is constructed based off the true total returns of the S&P 500 over the period of 2006-2015.

Table 8 True S&P 500 Total Returns and Needed Financial Returns

Table 8 indicates the level of returns necessary for SRI Investments to generate the same total return on investment as that of a dual-purpose portfolio. This table assumes a 10% allocation ($100) to charity. All table factors are a fraction of 100 (%) and the data cover the period from 2006-2015. Column one is the total returns on the S&P 500 from 2006-2015. Column 2-6 represent the respective tax rates of investors - 10%, 15%, 25% and 35% respectively. Column 6 displays the PARWX returns. The returns on the SRI are calculated as 

\[
(1 - D)(1 + R_m) - 1 + DT = R_{SRI} = W_{SRI}
\]

where D is the donation - 10%, \(R_m\) is the return in column one and T is the tax rate provided.

<table>
<thead>
<tr>
<th>Assigned Tax Bracket</th>
<th>Total Return</th>
<th>10%</th>
<th>15%</th>
<th>25%</th>
<th>35%</th>
<th>PARWX Returns</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>11.73%</td>
<td>1.56%</td>
<td>2.06%</td>
<td>3.06%</td>
<td>4.06%</td>
<td>14.86%</td>
</tr>
<tr>
<td></td>
<td>1.35%</td>
<td>-7.79%</td>
<td>-7.29%</td>
<td>-6.29%</td>
<td>-5.29%</td>
<td>5.62%</td>
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<tr>
<td></td>
<td>-33.41%</td>
<td>-39.07%</td>
<td>-38.57%</td>
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<td>-36.57%</td>
<td>-29.93%</td>
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<td>21.52%</td>
<td>10.37%</td>
<td>10.87%</td>
<td>11.87%</td>
<td>12.87%</td>
<td>62.16%</td>
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<tr>
<td></td>
<td>11.97%</td>
<td>1.77%</td>
<td>2.27%</td>
<td>3.27%</td>
<td>4.27%</td>
<td>12.93%</td>
</tr>
<tr>
<td></td>
<td>-.64%</td>
<td>-9.58%</td>
<td>-9.08%</td>
<td>-8.08%</td>
<td>-7.08%</td>
<td>-1.61%</td>
</tr>
<tr>
<td></td>
<td>12.67%</td>
<td>2.4%</td>
<td>2.90%</td>
<td>3.9%</td>
<td>4.90%</td>
<td>22.02%</td>
</tr>
<tr>
<td></td>
<td>27.60%</td>
<td>15.84%</td>
<td>16.34%</td>
<td>17.34%</td>
<td>18.34%</td>
<td>1.15%</td>
</tr>
<tr>
<td></td>
<td>11.79%</td>
<td>1.61%</td>
<td>2.11%</td>
<td>3.11%</td>
<td>4.11%</td>
<td>18.50%</td>
</tr>
<tr>
<td></td>
<td>.66%</td>
<td>49.4%</td>
<td>50.90%</td>
<td>51.9%</td>
<td>52.90%</td>
<td>3.23%</td>
</tr>
</tbody>
</table>

Table 8 presents an analysis of the necessary total returns of an SRI investment to match the historic returns on the S&P 500 and the value added from charitable contributions. It is clear from this table that even if the social returns are factored into a combined portfolio, the SRI
returns necessary to match the total returns of the combined portfolio are far less. It is also key to note that in column 6, the PARWX- leading social impact investment- returns are far greater each year than any of the required returns in each tax bracket. The returns necessary increase as the tax rate increases because the investor is able to increase their wealth via the tax benefit they receive from their charitable contribution. For instance, an investor in the 15% bracket needed to generate 2.27% returns in 2010 on an SRI in order to match the returns of a DPP. In 2010, the S&P 500 was generating returns of 11.57%, indicating that the SRI can perform far worse and still generate the same financial returns. In this year, the PARWX generated returns of 12.93%. This value, like all of the other PARWX return values, exceeds the value of the S&P 500 and necessary returns calculated. This is because their social wealth and financial wealth change by the net present value of the future cash flows without any loss due to charitable contributions:

\[
W_{FSRI} = \frac{CF_t}{(1+n)_t} - p + SAT
\]

In order to address concern over the positive impact of these funds and the societal contributions made by the companies within a socially responsible fund, I created a portfolio based off the top 100 SRI Companies of 2016 (Ranker) and the top 100 charitable contributors. The 14 cross-over companies for 2016 include- Bank of America, Chevron, CitiGroup, Conocophillips, ExxonMobile, Ford Motor Company, General Motors Company, Goldman Sachs, JP Morgan Chase & Company, Kroger Company, Morgan Stanley, Prudential Financial, Verizon, and Walmart. Unlike charitable contributions in a *dual-purpose portfolio*, investors can seldom choose what social causes they support in an SRI investment. They can choose SRI investments based on values and beliefs they have about the way society should be. For example, investors can buy into a Green Focused SRI if they care about the environment and sustainability.
or a Catholic Fund to match their religious beliefs. The former fund, for instance, would not
invest in companies that perform activities that contribute to greenhouse gas emissions, global
warming, or other environmental hazards.

The social returns of the SRI companies, $SAT_{SRI}$ will be explained in this instance as the
charitable contributions a company makes per share outstanding. These are shares that a
company has issued, or are held by shareholders. There are multiple different models and ways
that different funds quantify the social returns generated by SRIs. The need for a universal tool to
categorize the social returns on these funds is apparent. Table 9 is the model that this study will
use to quantify these returns.
Table 9 Top SRI Companies and their Charitable Contributions

Table 9 analyzes the charitable contributions made by 14 corporations that fall within both the Top 100 SRI companies and Top 100 Corporate Donors rankings. Column 2 is the percent of a company’s total income that is donated to charity. This is calculated as charitable contributions/ net income. Column 3 represents the number of shares per $1,000 donation. This is calculated as $1,000/ number of shares outstanding. Column 4 is the yearly returns of the company. Column 5 is the number of shares outstanding. Column 6 is the number of donations per share (Total Contributions/ number of shares) and Column 7 is the total donation by the company per $1,000 in shares outstanding. This is calculated as number of shares per $1000* donations per share.

<table>
<thead>
<tr>
<th>Corporation</th>
<th>%Donations</th>
<th>Shares per $1000</th>
<th>Returns</th>
<th>Number of Shares</th>
<th>Donations per Share</th>
<th>Donation per $1000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bank Of America</td>
<td>0.83%</td>
<td>63.89776358</td>
<td>1.89%</td>
<td>10,123,845,121</td>
<td>0.02</td>
<td>$ 1.16</td>
</tr>
<tr>
<td>Chevron Corporation</td>
<td>4.65%</td>
<td>9.716284493</td>
<td>35.90%</td>
<td>1,890,000,000</td>
<td>0.12</td>
<td>$ 1.16</td>
</tr>
<tr>
<td>Citigroup</td>
<td>0.58%</td>
<td>21.17298327</td>
<td>-4.17%</td>
<td>2,910,000,000</td>
<td>0.05</td>
<td>$ 1.04</td>
</tr>
<tr>
<td>Conocophillips</td>
<td>-0.61%</td>
<td>23.00437083</td>
<td>-6.26%</td>
<td>1,240,000,000</td>
<td>0.04</td>
<td>$ 0.82</td>
</tr>
<tr>
<td>ExxonMobil Corporation</td>
<td>1.22%</td>
<td>11.46789991</td>
<td>21.37%</td>
<td>4,150,000,000</td>
<td>0.06</td>
<td>$ 0.74</td>
</tr>
<tr>
<td>Ford Motor Company</td>
<td>0.54%</td>
<td>82.85004143</td>
<td>-4.79%</td>
<td>3,980,000,000</td>
<td>0.02</td>
<td>$ 1.16</td>
</tr>
<tr>
<td>General Motors Corporation</td>
<td>0.39%</td>
<td>31.85727939</td>
<td>10.83%</td>
<td>1,550,000,000</td>
<td>0.02</td>
<td>$ 0.62</td>
</tr>
<tr>
<td>Goldman Sachs Group</td>
<td>3.15%</td>
<td>6.200781298</td>
<td>28.03%</td>
<td>426,400,000</td>
<td>0.65</td>
<td>$ 4.02</td>
</tr>
<tr>
<td>JPMorgan Chase &amp; Company.</td>
<td>0.77%</td>
<td>15.01726986</td>
<td>12.17%</td>
<td>3,610,000,000</td>
<td>0.07</td>
<td>$ 0.98</td>
</tr>
<tr>
<td>Kroger Company</td>
<td>7.09%</td>
<td>33.69272237</td>
<td>-16.51%</td>
<td>944,170,000</td>
<td>0.23</td>
<td>$ 7.82</td>
</tr>
<tr>
<td>Morgan Stanley</td>
<td>0.74%</td>
<td>31.19151591</td>
<td>3.84%</td>
<td>1,910,000,000</td>
<td>0.03</td>
<td>$ 1.02</td>
</tr>
<tr>
<td>Prudential Financial</td>
<td>0.67%</td>
<td>12.24739743</td>
<td>-13.95%</td>
<td>437,000,000</td>
<td>0.12</td>
<td>$ 1.45</td>
</tr>
<tr>
<td>Verizon Communications</td>
<td>0.32%</td>
<td>19.23816853</td>
<td>24.66%</td>
<td>4,800,000,000</td>
<td>0.02</td>
<td>$ 0.36</td>
</tr>
<tr>
<td>Walmart Stores</td>
<td>5.65%</td>
<td>13.98601399</td>
<td>14.30%</td>
<td>3,090,000,000</td>
<td>0.45</td>
<td>$ 6.34</td>
</tr>
</tbody>
</table>

Although, the amount of charitable contributions for some of the companies seems bleak, these companies perform other duties and services to leave a social imprint. The charitable contributions are simply a social return added on top of the green programs, sustainability and poverty efforts these organizations are committed to aiding. It is clear from the table that a share of Kroger Company or Walmart will go the furthest at $7.92 and $6.34 respectively. An investor
would probably say that this value is incredibly small compared to the social impact created by the DPP investment. This value, SAT, calculated previously, as $91.24 is much greater.

In terms of the financial returns to the investor, the SRI generates higher returns. In the financial mindset, the $AT_{SRI}$ simply provides additional returns on top of the already higher financial returns. In terms of total wealth, \( W_{TSRI} = \frac{C_F}{(1+n)^t} - p + SAT \), the SRI also provides more total wealth to the investor.

The decision then comes down to whether the investor is able to justify the social efforts made by the company within the fund. For some investors, the sheer fact that the fund generates more than the previous decision is an acceptable reason to move forward with the SRI decision; however, for others, they may not be able to understand the impact created by this fund in order to “feel good” about their investment decision.

Although the investment returns on an individual shareholder basis do not seem significant, some companies have the ability to create large social impacts. I will use Kroger as a prime example. In “2015 Highlights”, Kroger reported the following in their statement of impact:

- “276 Million Meals donated
- Over 7,500 veterans hired
- $52 Million dollars donated to schools and organizations participating in community rewards
- Ranked 95% on the Corporate Equity Index
- Supported 19 fishery improvement projects
- 158,000 tons of food waste recycled
- Reported that 31 of 33 of its plants were zero waste
• Named energy star partner of the year

• Normalized carbon reduction 9.3%”

Because of this report, an investor can see that socially responsible investments do generate a financial and social return. This is just an example of one company in a SRI fund. If constructed correctly, these funds could leave a lasting impact on the world and compliment already existing non-profits’ revenue generating efforts.

This SRI construction includes building a diverse portfolio of companies that contribute financially and socially to their external environment through charitable contributions, service, environmental, social and governance structures, volunteering, and a commitment to a sustainable future. The companies should cover multiple sectors and must generate the financial returns necessary to match the stock market, while still meeting additional social goals.
VII. Discussion

Investors that categorize themselves as charitable donors, now have two different options to pursue when making financial decisions with their income. The purpose of this study was to determine if combining the investors charitable and investment desires into one socially responsible investment would generate higher social and financial returns than performing both separately. These two choices are the dual-purpose Portfolio and the socially responsible investment models. Both investment approaches allowed the investor to generate social and financial returns. The data, however, show that socially responsible investments can perform far less than those of dual-purpose portfolios; therefore, investors can still make a social impact and generate higher financial returns by choosing this investment approach.

By developing, a model that allows an investor to understand the optimal SRI returns that would make them indifferent, I demonstrated the effects of tax rates and level of charitable contributions on the necessary SRI financial returns needed to make an investor indifferent.

Beginning at Table 2, assuming market returns of 12%, the investor in the 10% bracket that chooses to donate 1% to charity needs to obtain SRI financial returns of 10.98% to make them be indifferent. At the 5% rate, this same investor’s return drops to 6.90%. The investor at the 39.6% tax rate that donates 1% or 5% to charity will need to generate returns of 11.28% and 8.38% respectively. This relationship continued in the models in which S&P 500 returns equaled 0% and -12%. As the tax rate increases, the SRI returns necessary to make the investor indifferent increase as well; however, as the amount contributed to charity increases, the necessary SRI returns decrease. Across Tables 2, 3, and 4, the SRI returns necessary are always
lower than the S&P 500 returns. This responds to the purpose of the study. When both social and financial needs are combined, the SRI investment, the returns needed are much lower.

The second aspect of the study was the importance of social returns to the investor, or SAT. An investor is at an immediate financial loss by donating a portion of their portfolio to charity, as indicated in table 5. In addition to being at an immediate financial loss, the investor will also not be able to donate the entire charitable portion of their donation to charity. As explained in Table 6, human service and education organizations donate the most to charity. On average, these categories utilize 93% and 92.47% to fulfill their social mission and purpose. This means that an investor that donates $100, or 10% of their investment to a human services charity, will generate total returns of $93- $100 + .1($100) = $3 over the S&P 500.

Table 7 indicated that when the S&P 500 returns are negative or below 30%, an investor should pursue a dual-purpose portfolio to generate higher financial returns. When the total returns were compared with those of the SRI, in table 8, the SRI returns necessary proved to be lower no matter the tax rate or donation amount.

The purpose was to explain that the returns that would make an investor on a dual-wealth pursuit indifferent between the SRI and DPP. The difference between DPP returns and SRI returns is the cost of feeling good. Table 9 does not provide enough justification for the investor who is more interested in generating social wealth than financial wealth. This is because an investment in an SRI only provides up to $7.82 in charitable donations. Although financially at the 10% level, this relates to an increase in satisfaction of $7.82 to the DPPs $1.46 social wealth return. The difference between these two choices is that the DPP investor is aware that they donated an average of $91.46 to a social mission and the SRI investor feels as if they only
donated $7.82. Kroger was the leading charitable contributor on a per share basis both because of the lower number of shares outstanding and greater charitable contributions. Although, the SRI proved to be a better financial decision for investors and generated a higher overall total return, it appears that financially their social contribution is far less than that of the DPP.

The main difference between the two decisions is that the investor does not have the direct ability to donate to the charity of his or her choice in a SRI. They, however, do have the choice to invest in an SRI that has a specific mission. The mission of the SRI and values of the respective organizations in the fund could center on environmental sustainability, financial inclusion, religious groups, education, or several other focus groups. The fund could also be comprised of companies that have superior environmental, social and governance policies. Therefore, the investor may not be able to choose the exact charity they are donating to, but rather can invest into a plethora of companies that whose social mission and footprint match his or her charitable desire.

Therefore, the model displayed that the SRI does not perform as well to make the investor indifferent to the returns of a portfolio that is split between a charitable donation and an investment in the S&P 500. It did indicate opportunities for future study.
VIII. Summary

Two major issues arose when analyzing the total wealth indifferent points between the DPP and the SRI. The first, concerns the benchmark used for SRIs. Considering the dual-purposed nature of the SRI, a new benchmark could be established as a better comparison. The second idea that surfaced was the need to be able to quantify the social aspect of the SRI. To please investors, as Kroger did in the 2015 Sustainability Report, the companies within the SRI need to begin publishing reports concerning their societal impact. In this way, investors will be able to understand the social impact made by the fund. The Global Impact Investing Network, along with Morgan Stanley, have joined to develop these social impact metrics; although, many fund managers still have their own decision metrics.

This study could be extended to the Impact Investment field in order to better quantify the social wealth generated by the investment. This is because impact investments specifically report their social footprint. The true financial and social impact generated by this new investment class should be further studied to understand growing market demands for SRI and Impact Investments. Millennials are eager to jump into these funds.

Sorenson in Rethinking Philanthropy suggests the potential of the millennial generation to invest in SRI Impact Investments and change the way money can affect society. With 41 trillion dollars being channeled into SRI investments, the millennial generation can cause big business to have to find channels of social responsibility and impact (Sorenson, 2016). With 70-90% of Americans already giving charitable “gifts,” this new investment model could be very appealing and wealth generating.
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